

## WATER SUPPLY.

NEW YORK AN EXAMPLE TO LONDON.

THE Croton aqueduct and water-works have cost more than three millions sterling, although New York is only about the size of Glasgow, with a population of not much more than one-third of a million, the mere miscellaneous gatherings of the surplus population of this and other countries during the present half of a century almost alone. Let us bear no more misgivings then, on the head of expense, however great, in the adequate supply of pure and healthful water to a population of six times the amount in our own metropolis.

The following details of the construction of the noble water-works of New York were collected by a correspondent of the *Reformers' Gazette* from authentic American documents and publications. The dam constructed to supply the aqueduct is about six miles above the mouth of the river Croton, and about forty miles from the city of New York. It is elevated 28 feet above the level of the river, and is 250 feet in length. The masonry is 8 feet thick at top, and 65 feet at base. It sets the water back about six miles, forming what is called the fountain reservoir, which is estimated to cover an area of 400 acres. The width of the lake varies from a quarter of a mile to about one-eighth. The height of the interior of the aqueduct is 8 feet 5½ inches, and the greatest width is 7 feet 5 inches. The foundation is formed with concrete, the side walls of stone; the bottom and sides of the interior are faced with brick, and the top is covered with an arch of brick. Thus constructed, it is carried over valleys and through hills, a distance of thirty-eight miles, to the receiving reservoir in the island of New York. From the receiving reservoir the water is conveyed in two miles of iron pipes to the distributing reservoir, in which the surface of the water is 115 feet above the level of mean tide.

The aqueduct, 12½ miles from the Croton dam, crosses the Mill river 72 feet below its previous level by a culvert, the arch of it through which the river crosses being 172 feet long, all within the foundation breadth on which the aqueduct rests. The valley of the Harlem river (or branch of the sea), a quarter of a mile in breadth, and descending 120 feet below the previous level of the bottom of the aqueduct, was always regarded as by far the most formidable work to be encountered in the construction of this aqueduct. Various plans were proposed to accomplish this object, comprising an aqueduct stone bridge, resting on piers and abutments, so as to continue the aqueduct at the same elevation; an inverted syphon of iron pipes; a suspension bridge of wire cables, supported at intervals on stone piers, and carrying the water across in iron pipes without descent.

It was at length resolved to combine the two ideas of a stone bridge and an inverted syphon of pipes, and this plan was in progress when an act of the Legislature of the State was passed, requiring that either a tunnel should be carried under the bed of the river, or that a structure should be erected of which the arches should be, at least 80 feet span, and 100 feet from the level of high water to the under side of the crown.

The history of the Thames tunnel deterred the engineers from attempting a similar work, 300 feet in length, under the bed of the Harlem, and finally it was resolved to construct an aqueduct bridge of exactly the altitude required. This being only 100 feet above high water level, an inverted syphon of iron pipes was still necessary.

**COLOURING BRICKS.**—A patent has been granted at New York, to Mr. C. B. Doty, Cortlandt, Westchester county, N.Y., for a "peculiar process and manipulations of mixing colouring materials with the moulding sand for the surface of bricks, and the pressing the same upon and into the surface, so as to produce bricks of a uniform colour upon the surface, as well as of a uniform shape and smoothness, the same being effected with greater economy than by mixing a sufficient quantity of colouring matter to colour the whole body of the brick; and this, regardless of any particular colouring matter or special colour to be produced when the bricks are burned."

## Miscellaneous.

**THE GAS QUESTION.**—Wardmotes have been held throughout the City districts, at almost all of which congratulations have been voted on the immediate prospect of an abundant supply of cheap and good gas. They ought to have passed votes of thanks to THE BUILDER. A meeting of the Central Gas Consumers Company has also been held, to consider the clauses of their bill, which is based on the model Gas Act, limiting dividends to 10 per cent., and compelling further reductions in price to the extent of all surplus profits. At this meeting, or rather a meeting of ward committees and gas consumers into which it resolved itself, Mr. Pearson announced his resignation as a director, stating, at the same time, that the other day he found the corporation split into parties and sections on this question; and as he was dependent on it, and found his duties inconsistent with any further official connection with a company forming the subject of such party spirit in the corporation, he felt obliged to announce his resignation, although, extra-officially, he would still forward its interests as earnestly as ever. At this meeting also a determination was expressed that the next object after the successful issue of the present shall be to attack the water companies, whose charges were also far too high. A rumour that the new gas company meant to supply their own gas fittings was expressly contradicted. One speaker, Mr. Lowe, said that the old companies had asserted that they had not divided more than 10 per cent. profits, and that, therefore, their profits were quite reasonable; but these gentlemen had forgotten to state that, in addition, they had also obtained no less than from 70s. to 100s. bonus per share at frequent intervals. He himself was acquainted with an old lady who had received a bonus of 80s. per share.

—The Chartered Gas Company have now reduced their price to 5s. per 1000 feet.

—The Surrey Consumers Gas-light and Coke Company are now again afloat. They have already commenced their works, with consent of the parochial authorities of Lambeth, St. George's, Southwark, Camberwell, Peckham, Rotherhithe, and various other districts south of the Thames to open roads and lay pipes, &c. A reduction of their proposed price of 5s. (too high, as we said at its outset) to 4s. 6d., with share of profits, or as without share of profits, has also been announced, and they expect to be supplying customers by contract or meter early in the ensuing year.—The Salisbury Gas Company are to reduce their price 1s. a thousand cubic feet at the opening of the new year.

**SOCIETY OF ARTS.**—At the meeting on 19th inst.—Mr. T. Uwins, R.A., in the chair.—Mr. Highton read a short supplementary paper on "The Application of Electricity to the Arts and Sciences." A number of new specimens of electrolyte were exhibited, among which was some iron tubing, coated with a deposit of cadmium to prevent oxidation; also iron covered with a deposit of brass, hitherto deemed impossible, the brass being a deposit of copper and cadmium, instead of copper and zinc. The construction of chronometer balances, on which a deposit of copper on the steel remains instead of brass without fusion, the temperature of the steel remaining the same as that of the atmosphere, was also exhibited. The remaining specimens, which were of remarkable beauty, were supplied chiefly by Capt. Ibbotson, Mr. Elkington, Mr. Collis, and Mr. Achermann; those of the last-named gentleman being from the royal manufactory at Berlin. The paper concluded with a further explanation of the philosophical part of the subject. A paper on Fox and Barret's method of constructing buildings fire-proof was read.

**WOLVERSTON MECHANICS' INSTITUTE.**—A very agreeable meeting of 1,400 to 1,600 persons took place at a *soirée* on 21st inst., at Wolverston, in support of the institute for railway mechanics established there. Mr. Glyn, Captain Huish, Sir Harry Verney, the Mayor of Birmingham, Mr. Cruikshank, the artist, and Mr. McConnel, the superintendent, and others addressed the meeting, and the utmost harmony and good will to its objects were displayed by all present.

**PROJECTED WORKS.**—Advertisements have been issued for tenders, by 8th proximo, for executing the works of warming and ventilating the church of Northfleet, with plan and specification; by 31st inst., for the erection of a stone bridge of one arch, of 80 feet span, at Ottery St. Mary, Devon, and for approaches to same; by 15th proximo, for the execution of the whole works connected with the erection of three passenger station houses on the Glasgow, Dumfries, and Carlisle Railway; by 12th, for laying down water pipes at Southampton; by 31st inst., for the masons' and joiners' work in erecting a coal shed at Sherburn House colliery (Gateshead); and by 12th proximo, for the erection of two four-story warehouses at Leicester.

**ARCHITECTURE OF BIRMINGHAM.**—At the St. George's Instruction Society, Birmingham, a lecture was delivered on Tuesday evening, by Mr. P. Hollins, "On the Architecture of Birmingham, with suggestions for its improvement." In the course of it the lecturer urged that so much advantage would follow the improvement of the town, that it could scarcely be paid for too dearly. He said:—"If we take a prospective view of the subject for a hundred years, I venture to assert that half the amount of money that would be expended in that period upon public and private buildings on the present disjointed and irregular plan, might be made simply sufficient to produce order and harmony in our street architecture and splendour in our public edifices, and achieve for the town a high fame for its architectural character. The first thing to be done is, the authorities must obtain powers to control the designs of houses in the streets. This would enable us to obtain some of those beautiful vistas of architecture which charm us so much in the improvements at the west end of London. Continuity of line, with uniformity of plan, in certain parts of a composition, give beauty and harmony, and, if on a sufficiently large scale, sublimity. Should any one ask what will become of the picturesque in the event of my plan being adopted, I reply, I am not considering a plan of a new town, but proposing to arrange and harmonize an old one, which is full of oddities, and where a few simple lines are absolutely necessary to soften down the conflicting and abrupt contrasts which every where meet and bewilder the beholder."

**PROVINCIAL.**—A new county court house is in course of erection at Bow.—A native of Wolverhampton proposes to give 1,000*l.* towards the building of an orphan asylum for South Staffordshire in that town, and an additional 1,000*l.* towards the endowment, if the trustees of the Blue Coat School can increase and remove their boarders to the new site, and leave their day-school to parochial tuition.—A new window, representing the crucifixion, has been painted by Mr. M. O'Connor, of London, and placed in the eastern lancet of the chancel of Shenton Church, as an offering by Miss K. E. Wyatt, sister to the incumbent.

—Mr. Cobden and others have resolved to erect a very large public room at Leeds.—The foundation-stone of a new building for the Carlisle City and District Bank was laid on Wednesday week in that city. It is to be of white stone, from Lanerton quarry, on the Earl of Carlisle's estate, the barony of Gilsland. The site is that of the old "White Lion" inn, English-street,—one of the oldest houses in the city, just removed. A flagged thoroughfare will be provided from English-street to Lowther-street. The architect is Mr. T. J. Cox, and the contractor, Mr. R. Wright.—The works for building Flag-lane schools, Sunderland, were let on the 17th inst., to Messrs. Millar and Lax of that town, and it is intended to begin operations immediately. Mr. T. Oliver is the architect.

**THE MARBLES OF PAROS.**—The Government of Greece have, by contract, made S. Ceanthea the sole possessor, for the period of thirty years, of all the quarries of marbles in the commune of Naoussa, at Paros. The proprietor has commenced extracting the marble, and has sent several blocks of large size to Rome and Florence.

**NEW HOSPITAL FOR KING'S COLLEGE.**—The munificent offer of 5,000*l.* has been anonymously made and accepted by the council towards the extension of the hospital accommodation for King's College, Somerset House.